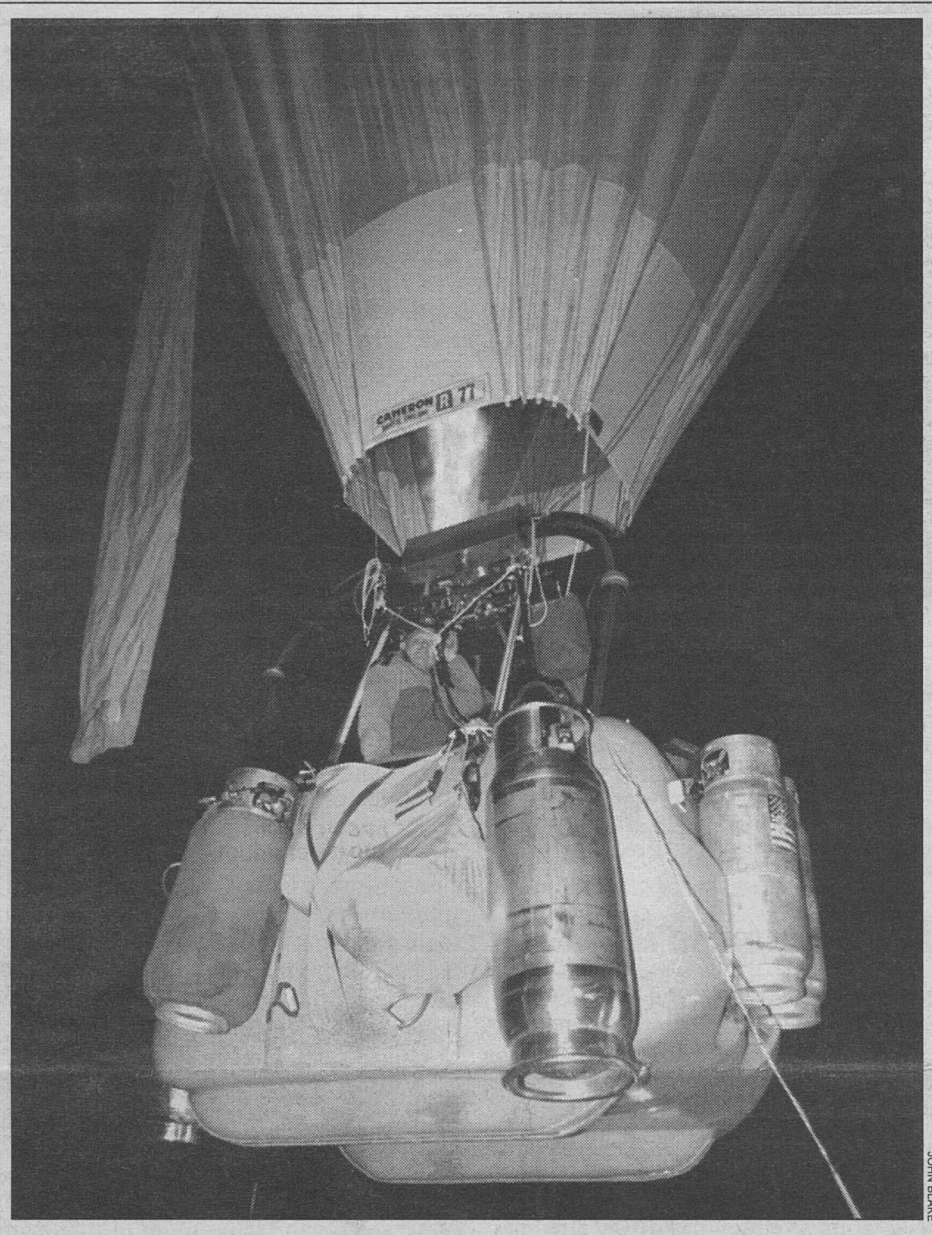
11-13-1997

Washington University Record, November 13, 1997

Record
WASHINGTON UNIVERSITY IN ST. LOUIS
Vol. 22 No. 12 Nov. 13, 1997



JOHN BLAKE

Flying high

Steve Fossett, Washington University trustee and alumnus, ascended from Greeley, Colo., at 9 p.m. Nov. 5 and guided his helium hot air balloon to 24,000 feet to test the effects of altitude on the burner, autopilot and new cabin heater system in preparation for his round-the-world attempt this winter. He landed early the next morning in a Kansas wheat field after a successful test flight. Washington University will serve as Mission Control for Fossett's flight.

Patents issued to develop plants as edible vaccines

The United States Patent Office has granted two patents on the production and use of transgenic, or genetically engineered, plants as edible vaccines to protect against a wide variety of infections — bacterial, viral, fungal and parasitic.

Roy Curtiss III, Ph.D., the George William and Irene Koechig Freiberg Professor of Biology in Arts and Sciences, and Guy Cardineau, Ph.D., a scientist with Mycogen Corp. of San Diego, Calif., are the co-inventors of the patented technology, which has been assigned to Washington University. The University has granted Mycogen an exclusive license to develop these edible vaccines for prevention of animal and human infectious diseases, and Mycogen will be developing commercial products based on these technologies. Patents have been issued or are pending in other countries.

The news was announced last week in Chicago at the annual meeting of the American Association of Agricultural Editors.

Mycogen hopes to begin with edible vaccines in animal feed protecting chickens and pigs from respiratory and intestinal diseases. Vaccines for cows, with their more complex digestive tracts, would come later. The technology also holds promise of helping control food-borne diseases in humans, such as those caused by *E. coli* and *Salmonella* bacteria.

The first edible vaccines will not be available for several years. When they do appear, however, the global market is expected to be substantial. According to the World Health Organization, infectious diseases claim the lives of more than 12 million children under age five each year. Two million of those deaths could be prevented by vaccines already available. Additionally, 40,000 adults die every year of vaccine-preventable diseases, according to the Centers for Disease Control.

Curtiss and Cardineau conceived of the idea for plant vaccines and initiated their collaborative research in 1985. Curtiss was then a scientific adviser for Sungene Corp., a California plant biotechnology company that employed Cardineau as a plant molecular biologist. The concept was to endow plants with the genetic ability to synthesize proteins or other antigens normally present on the surface of various infectious disease agents. An animal or human ingesting the plant material — leaves or seeds, for instance — would recognize the pathogen antigens as foreign and mount an immune response that would protect against infection by the pathogen.

An important feature of edible vaccines is their ability to induce mucosal immunity — the secretion of antibodies in saliva, tears and milk and in all the secretions that bathe the mucosal surfaces in the respiratory, gastrointestinal and genitourinary tracts. The secretory antibodies account for about 75 percent of the antibodies the body makes and serve as a first line of defense against pathogens that enter the body by attaching to or invading through a mucosal surface. Most pathogens use this route of entry.

Curtiss and Cardineau initiated their research with tobacco because it is easy to manipulate genetically, even though ultimately it could not be useful as an edible vaccine. They engineered tobacco to produce surface protein antigens of *Streptococcus mutans*, the principal cause of tooth decay, and were able to induce in mice fed the transgenic tobacco a mucosal immune response against *S. mutans* protein anti-

Continued on page 6

Kemper faculty grants awarded

What does it mean to be an American — and does today's society reflect the country's founding principles? What implications does the burgeoning understanding of the connections between brain and mind have on child development? Does a Christian church hold the same religious significance as a Buddhist temple? What are some of the distinctive cultures that combined to create Medieval European traditions?

Thanks to the Kemper Faculty Grants to Improve Learning at Washington University, these and many more cutting-edge questions are on the minds of undergraduates during the 1997-98 academic year.

Established in 1991 with a five-year $150,000 bequest and renewed in 1996 with a five-year $200,000 gift from the William T. Kemper Foundation-Commerce Bank Trustee, the Kemper program encourages innovative work on new courses and programs for undergraduates. It also is designed to enhance existing courses and to foster cross-disciplinary exploration among students.

The 1997-98 faculty grants, administered by the University's Teaching Center, will support four new classes. This year's recipients are:

• Diane Beals, Ed.D., assistant professor of education in Arts and Sciences;

• Beata Grant, Ph.D., associate professor of Asian and Near Eastern languages and literatures in Arts and Sciences;

• Thomas F. Head, Ph.D., associate professor of history in Arts and Sciences;

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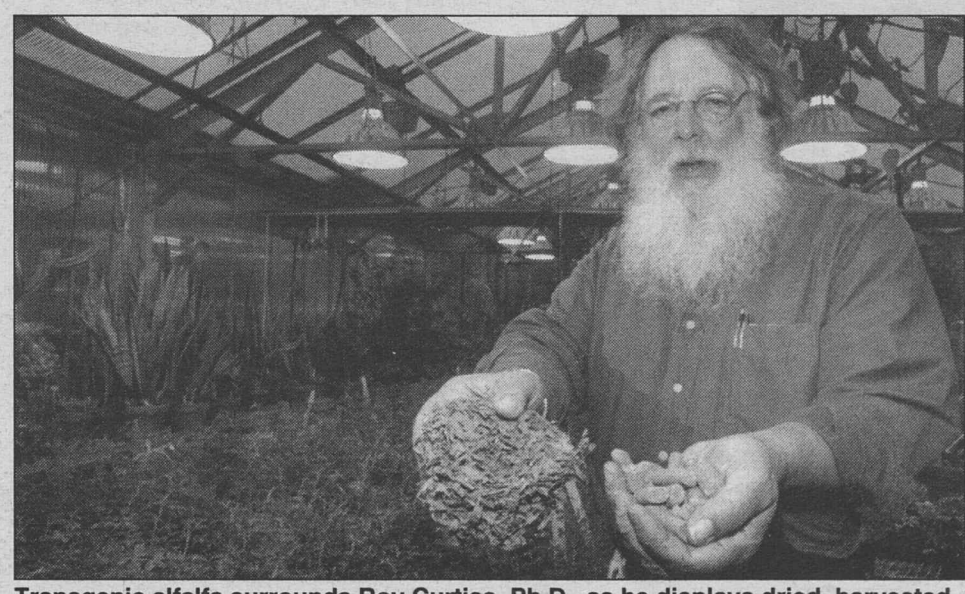


JOE ANGELES

Transgenic alfalfa surrounds Roy Curtiss, Ph.D., as he displays dried, harvested plants in his right hand and animal feed made from it in his left.

In this issue ...

Plans for Wohl student assembly hall go forward

The Clayton Board of Aldermen has approved Washington University's plan to construct College Hall, an addition to the Wohl Student Center.

The two-story, octagon-shaped structure will be attached to the west side of Wohl. It will house an assembly room on the second floor and a fitness center on the first floor. The 11,000-square-foot addition is expected to be completed by fall 1998.

The assembly area will hold 350-400 students and will serve as a common gathering area for residents of the South 40. It will play an integral role in the new residential college philosophy of the South 40. Residential colleges are subset communities of students that aim to provide students with an enhanced sense of pride and kinship, expanded programmatic choices and increased faculty and staff presence and support.

The new approach began last fall, when the existing residence halls on the South 40 were divided into eight residential colleges. When construction of the new residence halls is completed, the student community of as many as 2,800 students will contain more than 10 residential colleges. The new assembly area will provide the only place on the South 40 large enough for a residential college to meet.

The fitness center will be primarily for students, but faculty and staff also may use it. It will contain aerobic equipment, such as rowing machines and stationary bicycles, and possibly a sauna and whirlpool.

Mackey Mitchell Associates of St. Louis is the design firm for the addition. The design should be finalized by the end of the year and then bids will be requested from construction companies. Construction is scheduled to begin in the spring.

Medical Update

MARY BUTKUS

Well-baby screening

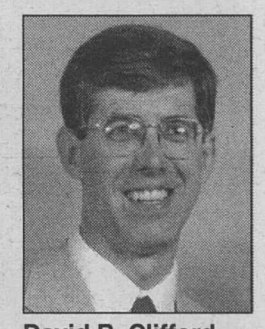
At a Nov. 9 well-baby screening at the Vietnamese Lutheran Church, second-year medical student Lynn Henry measures the head of 2-year-old Jimmy Dang. Henry and others in the Asian Pacific American Medical Student Association (APAMSA) conduct screenings each month in the local Vietnamese community. The APAMSA is dedicated to serving the interests of Asian-American medical students and addressing health issues in the local Asian-American community.

Clifford named vice chair of neurology

David B. Clifford, M.D., has been named to the new position of vice chair of the Department of Neurology. He will assume his duties Jan. 1, 1998.

Dennis W. Choi, M.D., Ph.D., the Andrew B. and Gretchen P. Jones Professor and head of neurology, announced the appointment. "David Clifford has been an outstanding member of the faculty for many years and an effective director of our residency training program," Choi said. "He's a wise man whose talents in patient care, teaching and research are widely appreciated by all."

Clifford, a professor of neurology, will work with Choi on a variety of administrative tasks, particularly the delivery of clinical services and the mentoring of junior faculty.



David B. Clifford

He also sits on the boards of St. Louis Regional Medical Center and the Institute of Medical Education and Research. He is a staff physician at Barnes-Jewish Hospital and chief of neurology and president of the medical staff at ConnectCare, the organization succeeding Regional Medical Center.

As principal investigator of the federally funded Neurologic AIDS Research Consortium, Clifford coordinates clinical trials around the nation that address neurologic problems among HIV-infected patients. More than half of AIDS patients develop serious neurological complications such as dementia, painful neuropathy or rapidly fatal damage to the spinal cord.

A disorder named distal sensory neuropathy is one focus of the Washington University research. Current therapies try to block the pain, but Clifford's group is determining whether a recombinant form of nerve growth factor might restore damaged or dying neurons to a more normal state of health.

Clifford joined the faculty as a research instructor in neurology in 1991, attaining the rank of professor by 1994. He also is clinical representative to the executive faculty at the School of Medicine.

Quitting smoking

Withdrawal symptoms most severe in women with psychiatric illnesses

Giving up smoking is harder for some than for others. Though it generally is true that quitting is more difficult for those who smoke more cigarettes or have smoked longer, School of Medicine investigators have found that psychiatric illnesses also may contribute to severe withdrawal symptoms, making it even harder for those smokers to stop.

The investigators, led by Pamela A.F. Madden, Ph.D., research instructor of psychiatry, and Nicholas G. Martin, Ph.D., professor and senior research fellow of epidemiology at the Queensland Institute of Medical Research in Brisbane, Australia, questioned more than 550 Australian women to learn their smoking histories, determine their history of nicotine dependence and catalog their nicotine withdrawal symptoms. This study, which was supported by National Institutes of Health grants, was reported in a recent issue of the journal Addiction.

Pamela A.F. Madden

"I was interested in whether there were different profiles of nicotine withdrawal symptoms, and if so, whether certain combinations of symptoms might be more likely to occur in smokers with a history of psychiatric disorder," Madden said. "The literature suggests an association between nicotine dependence, nicotine withdrawal and a history of major depression, a psychiatric disorder that is more prevalent in women." The researchers limited the survey to women.

Madden found that most women in the study experienced one of three levels of nicotine withdrawal: mild, moderate or severe. About 41 percent of smokers suffered mild withdrawal from nicotine, with most experiencing only a few symptoms. Another 36 percent were rated with moderate withdrawal symptoms. The severe group comprised about 18 percent of smokers in the study.

The withdrawal symptoms evaluated in this study included nervousness, trouble concentrating, depressed mood, nicotine craving, irritability, restlessness, headaches, drowsiness, upset stomach, slowed heart rate, increased appetite, shaky hands and trouble sleeping. Symptoms that best distinguished smokers with severe withdrawal were characteristic of mood disorder. Of the study subjects who had experienced severe nicotine withdrawal, 84 percent reported a depressed mood after quitting cigarettes, 82 percent suffered with nervousness and 58 percent had insomnia. Only 20 percent of those with moderate withdrawal symptoms felt nervous when they stopped smoking.

After identifying subjects by level of nicotine withdrawal, Madden looked for associations between the severity of withdrawal and a lifetime history of psychiatric illness or specific personality traits. The idea was to identify factors that might predispose a patient to nicotine withdrawal symptoms.

If those with certain personality traits or psychiatric disorders are more likely to suffer severe nicotine withdrawal, clinicians could offer these patients greater levels of intervention before the attempt to quit smoking begins and nicotine withdrawal becomes an issue.

Among those reporting severe withdrawal symptoms, Madden found associations with mood and anxiety disorders. Conduct disorders as adolescents also were common in those who suffered severe nicotine withdrawal, but those problems did not correlate with lower levels of withdrawal.

"When we looked at those associations, we found that, compared with non-smokers, only those who suffered from severe nicotine withdrawal were more likely to have psychiatric disorders," Madden said. "Those with mild to moderate levels of withdrawal were no more likely than non-smokers to be depressed, anxious or suffer from other psychiatric problems."

Madden plans further analysis of this data to look more closely at genetic and personality factors involved with nicotine withdrawal. All women surveyed in the study were twins, so she hopes to look at whether symptoms of nicotine withdrawal and other indicators of nicotine dependence run in families.

— Jim Dryden

Schwartz receives grants to study receptor molecule, protein degradation

Alan L. Schwartz, M.D., Ph.D., the Harriet B. Spoehrer Professor and head of the Department of Pediatrics, has received a $1.1 million grant to study the structure and function of a receptor molecule that helps regulate many activities in blood and in blood vessel linings. The four-year grant comes from the National Heart, Lung and Blood Institute.

The grant will enable Schwartz to further investigate the cell surface receptor molecule, called LRP, the largest known cell surface protein. Cell surface receptors are molecules that in some way respond to a signal from outside the cell and transmit that signal into the cell. LRP has the unusual characteristic of being able to recognize at least nine different regulatory proteins, which include many blood coagulation factors and proteins important in lipid transport.

Schwartz's laboratory and two other groups discovered LRP simultaneously in 1990. They identified it as the receptor responsible for removing tissue plasminogen activator — the t-PA used to treat blood clots — from the bloodstream rapidly.

"This support will allow us to identify and understand the molecular events involved in the functions of this receptor molecule," said Schwartz, who also is a professor of molecular biology and pharmacology. "The long-term potential involves strategies for treatments of myocardial infarction, Alzheimer's disease and stroke."

In addition, Schwartz has received a second four-year $1.1 million grant to continue studying the molecular mechanisms for the regulation of protein degradation within the cell. He has studied this area for 17 years.

Protein degradation research may lead researchers to a better understanding of disorders involving inappropriate protein destruction such as arthritis, lupus, diabetes and cystic fibrosis.

This grant, from the National Institute of General Medical Sciences, will enable Schwartz to further explore a specific pathway in protein degradation called the ubiquitin proteolytic pathway. He will determine how structures, functions and regulation of this pathway's components control the breakdown of certain proteins.

Record

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Record (USPS 600-430; ISSN 1043-0520), Volume 22, Number 12/Nov. 13, 1997. Published for the faculty, staff and friends of Washington University. Produced weekly during the school year, except school holidays, and monthly during June, July and August by the Office of Public Affairs, Washington University, Campus Box 1070, One Brookings Drive, St. Louis, MO, 63130. Periodicals postage paid at St. Louis, Mo.

Address changes and corrections:

Postmaster and non-employees: Send to Record, Washington University, Campus Box 1070, One Brookings Drive, St. Louis, MO, 63130.

Hilltop Campus employees: Send to Office of Human Resources, Washington University, Campus Box 1184, One Brookings Drive, St. Louis, MO, 63130.

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Washington
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Washington People

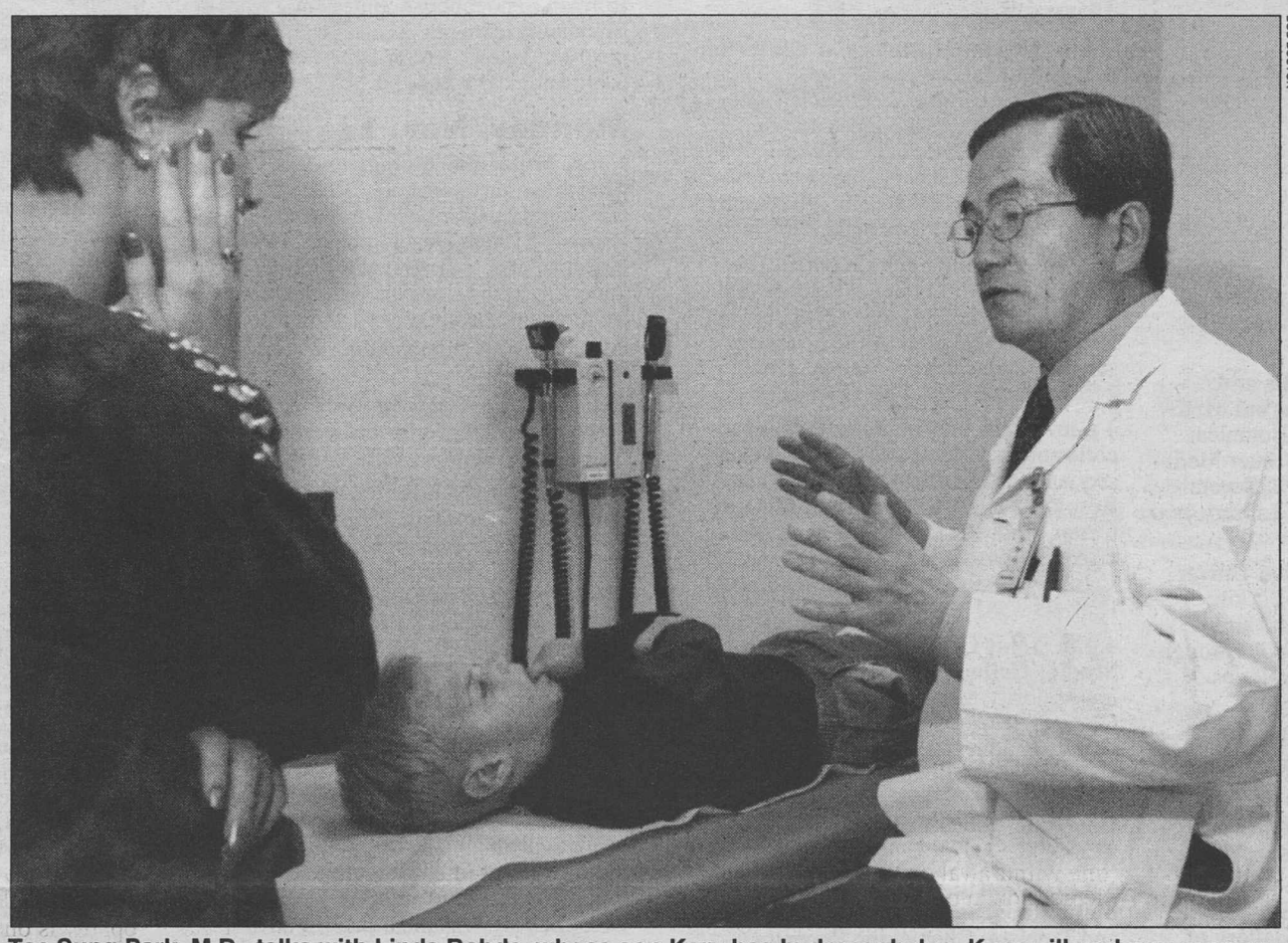
Tae Sung Park: a 'special gift' to children

As one of the world's leading pediatric neurosurgeons, the School of Medicine's Tae Sung Park, M.D., has received a host of honors for his surgical innovations and clinical research. Last August, he was named the Shi Hui Huang Professor of Neurological Surgery at the School of Medicine — the only full-time pediatric neurosurgeon anywhere to hold an endowed professorship.

Park's work also has garnered acclaim for his institution. "He has built pediatric neurosurgery at St. Louis Children's Hospital into a nationally and internationally famous program," said John A. Jane, M.D., the David D. Weaver Professor of Neurosurgery and chairman of the Department of Neurosurgery at the University of Virginia School of Medicine.

But the homespun accolades that come by mail, said Park, are the true measures of his success. He recently received the videotape of an 11-year-old former patient, a boy who was born with cerebral palsy. In 1992, Park operated on his spine in a procedure known as dorsal rhizotomy, to relieve spasticity and pain in his legs.

"Today, he is a normal boy," says Park, who also is a professor of pediatrics, and anatomy and neurobiology, as well as neurosurgeon-in-chief at Children's Hospital. "You can see him running and skiing with no problem."



BOB BOSTON

Tae Sung Park, M.D., talks with Linda Rohde, whose son Kory has hydrocephalus. Kory will undergo surgery to help him acquire more movement in his legs.

Park also has a framed picture of a smiling 7-year-old girl, a one-time hydrocephalus patient. Above the photo is a poem: "God gave me mommy/God gave me daddy/God gave me my sisters, too/But there's a special gift that God gave me/And that special gift was you. Thank you for making me better, I love you. Bobbi Sue."

Keeping tabs on his patients who now can lead more active lives is one of the pleasures of his work. "Since I have been in this field for almost 15 years, I am seeing children who were young when I operated on them going off to college," he said. "That is the very nice part."

Park, who came to the School of Medicine in 1989, has made pioneering improvements to several neurosurgical procedures in children. One is the dorsal rhizotomy, a delicate procedure he has performed on nearly 550 patients from the United States and abroad. First described in 1913, the operation was forgotten until the 1970s, when European surgeons rediscovered it. In 1987, Park became one of the first in this country to perform it, when he was on the University of Virginia School of Medicine faculty.

The operation, designed to reduce stiffness caused by cerebral palsy, exposes the tip of the spinal cord and selectively severs some of the sensory fibers that lead to the lower extremities. In 1991, Park modified the procedure. Now it is less invasive, requires a shorter recovery period and is available not just to young children but also to adolescents and adults. Today, more dorsal rhizotomies are performed at Children's Hospital than anywhere else in the world.

Preventing deformities

The effect of the operation is most dramatic in young children, "because we can prevent spastic deformities from developing in their legs," said Park. "Most of the time, their spasticity can be reduced permanently and even normalized. With children who are mildly affected, we operate on them — and afterward their families cannot tell they had cerebral palsy."

So far there have been no complications from the surgery. But Park and several School of Medicine colleagues are doing further research to quantify their results. Jack Engsberg, Ph.D., research associate professor of neurological surgery, is principal investigator. In September, they began a five-year project to study the changes in strength and spasticity of 160 children from ages 4 to 18 who will undergo dorsal rhizotomies. Supporting this research is a $1.8 million grant from the National Institutes of Health.

Along with this work, Park is known widely for his innovations in surgery for medial temporal lobe epilepsy in children. Previously, surgeons cut through the temporal lobe of the brain to remove portions of the hippocampus in an effort to reduce or eliminate epilepsy-induced seizures. But this technique also disrupted language function, which had to be remapped while the child was awake — and frightened — during surgery.

In 1994, Park, working together with Blaise F.D. Bourgeois, M.D., professor of neurology and of pediatrics, pioneered a modification in which he went underneath the temporal lobe rather than through it to remove parts of the hippocampus. In 18 patients thus far, he has found that 88 percent are seizure-free after surgery. Futhermore, none has any language problems or signs of illness.

"One of Dr. Park's characteristics is that he is very innovative," said Jeffrey G. Ojemann, M.D., a resident in neurosurgery who worked with Park during a six-month rotation at Children's Hospital. "He is always looking for different solutions to problems, always questioning current therapies to see what we can do better."

Park and his colleague, Michael J. Noetzel, M.D., associate professor of pediatrics and neurology, also are working to improve the treatment of brachial plexus injury, which can occur when a baby's shoulder gets caught in the birth canal during delivery. Although most of these children regain strength in their arms, 10 percent to 20 percent have some lasting disability, especially difficulty bending their arm or raising their shoulder.

> "He is always looking for different solutions to problems, always questioning current therapies to see what we can do better."
>
> **— Jeffrey G. Ojemann**

In their clinic at Children's Hospital, Park and Noetzel have treated the second-largest number of infants with brachial plexus injury in the United States. They are trying to identify the children who are the best candidates for surgery, as well as the optimum age for surgery.

Along with his clinical work, Park is researching the regulation of cerebral blood flow in the tiny vessels of newborns. He began this work in 1983 at Virginia. In 1987, he and his mentor, Robert Berne, M.D., then chairman of the physiology department, were the first to demonstrate the role of adenosine, produced by neurons in a newborn brain when it runs short of oxygen.

Now working with Jeffrey M. Gidday, Ph.D., assistant professor of neurological surgery, Park has continued this work in St. Louis. In 1995, they received a four-year, $1.2 million grant from the National Institutes of Health to study an inflammatory response that can damage blood vessels, and thus kill neurons, in the brains of newborns with oxygen deprivation or low blood pressure. This damage can lead to lifelong neurological disabilities, such as cerebral palsy, epilepsy or mental retardation.

"Dr. Park has an unusual ability to identify promising ideas and techniques and apply them in the laboratory," says Gidday. "He is also one of the few neurosurgeons in the country who has successfully maintained a basic science lab, along with his many clinical and administrative responsibilities."

For all the contributions he has made to his field, Park might never have become a pediatric neurosurgeon if he hadn't made a discovery at a crucial moment. Born in Korea, Park had graduated in 1967 from the premedical course at Yonsei University in Seoul and in 1971 from the Yonsei University School of Medicine. During his residency at Yonsei, he happened upon a pediatric neurosurgery textbook.

"It seemed entirely new to me," he said. "There was no one else in Korea doing it. So I wrote a letter to Dr. Jane at the University of Virginia and asked him if I could do pediatric neurosurgery training."

So after finishing his neurosurgery training in Korea, with a first prize in the board exam, he embarked on another six years of U.S. residencies and fellowships. He spent four years in Virginia for a second neurosurgery residency, a year in Ohio for a pediatric surgery residency at Columbus Children's Hospital, six months at Massachusetts General Hospital for a research fellowship in the Division of Neuropathology and, finally, a year at Toronto's Hospital for Sick Children for a pediatric neurosurgery fellowship.

It was a long process, but at the end he took the American Board of Neurological Surgery written exam and scored in the 100th percentile. "That gave me a little confidence," he said, modestly. "I thought that perhaps I could compete here."

Recruited to St. Louis

He took his first job in 1983 at the University of Southern California School of Medicine, but after a year Virginia lured him back to become assistant, then associate professor of neurological surgery and pediatrics. But Virginia did not have a children's hospital — so when Ralph G. Dacey Jr., M.D., the Edith R. and Henry G. Schwartz Professor and head of the Department of Neurological Surgery, recruited him to come to St. Louis, he accepted.

"I was so impressed by the people I met, both at Washington University School of Medicine and at Children's Hospital," he said. "It is a great children's hospital with a wonderful reputation, so it was easy to make the decision. And ever since, I have been blessed to work with wonderful colleagues."

Today, one of the roles he enjoys most, in addition to his clinical practice and research, is training residents. Instead of teaching techniques, he said he focuses on teaching the principles of pediatric neurosurgery and providing a role model as a teacher, physician and scientist.

"Our residents are some of the best in neurosurgery," Park said, "and if we just plant something in their brains — we don't have to force it on them — we can influence their whole professional career."

In his spare time, he occasionally plays squash or golf. But most of all, he likes to spend time with his family. His wife, Hyun Sook, is an artist; his daughter, Mina, is a senior at Harvard University; and his son, Thomas, is a sophomore at DePaul University in Chicago.

As a physician, he says, he is doing exactly what he wanted to do when he was a boy in Korea — and the mementos from patients show that he has been successful. "I wanted to be of service to people," he said. "This career was, to me, one of the best ways."

— Candace O'Connor

Calendar

Visit Washington University's on-line calendar at
http://cf6000.wustl.edu/calendar/events/v1.1

Nov. 13–22

Exhibitions

"An Exhibit of Theatre Design." The work of Bruce A. Bergner, Bonnie J. Kruger and Richard W. Kuykendall. Through Dec. 10. A.E. Hotchner Drama Studio lobby, Room 208 Mallinckrodt Center. 935-5858.

"Die Winterreise (Winter Journey): A Graphic Cycle After Franz Schubert." Etchings by contemporary Austrian artist Herwig Zens, based on Schubert's song cycle of the same name. Organized by the Austrian Cultural Institute, New York. Through Nov. 20. Music Classroom Bldg. 935-4841.

"Powerful Grace Lies in Herbs and Plants: A Joint Exhibit on Herbal Medicine." Sponsored by Missouri Botanical Garden Library and Bernard Becker Medical Library. Through April 1998. Seventh floor, Bernard Becker Medical Library, 660 S. Euclid. 362-4235.

Selections from the Washington University art collections. "Leonard Baskin: Prints," "The Age of Rembrandt" and "Recent Trends in American Art." Through Dec. 7. Gallery of Art, lower galleries. 935-5490.

"Strabismus." Artwork by undergraduates. Through Nov. 16. Bixby Gallery. 935-4643.

"The Dual Muse: The Writer as Artist, The Artist as Writer." Through Dec. 21. Gallery of Art, upper gallery. 935-5490.

"The Seven Deadly Sins." Woodcuts by Beat poet and author William S. Burroughs. Through Dec. 21. Gallery of Art. 935-4523.

"Una Selva Oscura." The work of Tom Phillips. Through Jan. 2, 1998. Special Collections, level five, Olin Library. 935-5495.

Films

Thursday, Nov. 13

8 p.m. Hillel Center presentation. "The Infiltrator." Ike's Place, South 40. 726-6177.

Friday, Nov. 14

7 and 9:30 p.m. Filmboard Feature Series. "People vs. Larry Flynt" (1996). (Also Nov. 15, same times, and Nov. 16, 7 p.m.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Midnight. Filmboard Midnight Series. "Shaft" (1971). (Also Nov. 15, same time, and Nov. 16, 9:30 p.m.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Tuesday, Nov. 18

7 and 9 p.m. Filmboard Foreign/Classic Series. "Fellini's Roma" (1972). (Also Nov. 19, same times.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Wednesday, Nov. 19

6:00 p.m. Japanese Film Series. "Vampire Hunter D" (1985; dubbed in English). Room 219 S. Ridgley Hall. 935-5156.

Friday, Nov. 21

7 and 9:30 p.m. Filmboard Feature Series. "Austin Powers." (Also Nov. 22, same times, and Nov. 23, 7 p.m.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Midnight. Filmboard Midnight Series. "Swingers" (Also Nov. 22, same time, and Nov. 23, 9:30 p.m.) Cost: $3 first visit, $2 subsequent visits. Room 100 Brown Hall. 935-5983.

Lectures

Thursday, Nov. 13

Noon. Molecular biology and pharmacology special seminar. "Developmental Patterning in the *C. Elegans* Tail." Helen M. Chamberlin, post-doctoral fellow, genetics dept., U. of Wash. Pharmacology Library: Philip Needleman Library, Room 3907 South Bldg. 362-0269.

4 p.m. Assembly Series lecture. The Thomas S. Hall Lecture. "Science and Medicine in the Service of Nazism." Robert Proctor, prof. of the history of science, Pennsylvania State U. Room 215 Rebstock Hall. 935-5285.

4 p.m. Earth and planetary sciences colloquium. "The Environmental Consequences of Impact Cratering: Recent Results of K/T Chicxulub and Meteor Crater Studies." David A. Kring, senior research associate, Lunar and Planetary Lab., U. of Ariz. Room 361 McDonnell Hall. 935-5610.

4 p.m. Joint Center for East Asian Studies Colloquium Series. "Constituting Majority/Minority Identities in China: The Curse of Path Dependency." Dru C. Gladney, prof. of Asian studies, U. of Hawaii at Manoa, and senior research fellow, East-West Center, Honolulu. Room 30 January Hall. 935-4448.

4 p.m. Molecular microbiology/microbial pathogenesis seminar. "HIV Entry and Tropism: Chemokine Receptor Connection." Edward A. Berger, chief, Molecular Structure Section, Lab. of Viral Diseases, NIAID, NIH. Erlanger Aud., McDonnell Medical Sciences Bldg. 362-4790.

4 p.m. Writing Program lecture/discussion. "Creative Non-Fiction: Fact, Fiction or What?" Leila Philip, author and asst. prof. of English, Colgate U. Hurst Lounge, Duncker Hall. 935-7130.

4:15 p.m. Philosophy/neuroscience/psychology colloquium. "Perceptual Symbol Systems." Lawrence Barsalou, prof. of psychology, Emory U. Room 362 McDonnell Hall. 935-5119.

4:30 p.m. Mathematics colloquium. Speaker is Jerry Kaminker, prof. of mathematics, Indiana U.-Purdue U. in Indianapolis, U. of Colorado-Boulder. Room 199 Cupples I Hall. 935-6301.

8 p.m. Writing Program Reading Series. Leila Philip, author and asst. prof. of English, Colgate U., will give a craft lecture on writing non-fiction. Hurst Lounge, Duncker Hall. 935-7130.

Friday, Nov. 14

9:15 a.m. Pediatric Grand Rounds. The 12th Philip R. Dodge Lecture. "Is Cerebral Palsy an Infectious Disease?" Karin B. Nelson, chief, Neuroepidemiology Branch, NIH. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Architecture/art/art history and archaeology lecture. Garth Evans, sculptor and teacher at the N.Y. Studio School, will speak on his work. Room 116 Givens Hall.

Noon. Cell biology and physiology seminar. "Insights Into Secretory Protein Traffic From Live Cell Imaging." Jennifer J. Lippincott-Schwartz, Cell Biology and Metabolism Branch, NIH. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

3 p.m. Art history and archaeology/Asian and Near Eastern languages and literatures/Asian Arts Society/East Asian studies lecture. "The Road Through Miyama: The Story of a Writer's Apprenticeship in a Japanese Pottery Village." Leila Philip, author and asst. prof. of English, Colgate U. Steinberg Aud. 935-7130.

4 p.m. Graduate Community Lecture Series. "National Graduate Student Issues." Sponsored by the Arts and Sciences Graduate Student Senate. Women's Bldg. Formal Lounge. 935-5581.

4 p.m. Molecular microbiology special seminar. "Messenger RNA Degradation and the Reaction Mechanism of RNase II." David E. Kennell, prof. of molecular microbiology. Room 775 McDonnell Medical Sciences Bldg. 362-2772.

4 p.m. Music lecture. "Genres of Wit and Irony in Schoenberg's Suite, op. 25." Michael Friedmann, assoc. prof. of composition, Yale U. Room 102 Music Classroom Bldg. 935-4841.

Monday, Nov. 17

Noon. Molecular biology and pharmacology seminar. "Role of POU-domain Transcription Factors in Sensory System Development." Jeremy Nathans, prof. of molecular biology and genetics, Johns Hopkins U. School of Medicine. Pharmacology Library: Philip Needleman Library, Room 3907 South Bldg. 362-2725.

3 p.m. Mathematics analysis seminar. Speaker is Sarah Ferguson, Purdue U. Room 199 Cupples I Hall. 935-6760.

4 p.m. Biology seminar. "Are Centromere Identity and Function Regulated by an Epigenetic Mechanism in *Drosophila*?" Gary Karpen, Molecular Biology and Virology Lab., The Salk Institute for Biological Studies, La Jolla, Calif. Room 322 Rebstock Hall. 935-5348.

4 p.m. Immunology Research Seminar Series lecture. "Analysis of the TOR-signaling Pathway Sensitive to the Immunosuppressant Rapamycin." Steven Zheng, asst. prof. of pathology and of medicine. Eric P. Newman Education Center. 362-2763.

8 p.m. School of Architecture Monday Night Lecture Series. "The Making of Great Streets." Allan B. Jacobs, a Ruth and Norman Moore Visiting Professor and prof., city and regional planning dept., U. of Calif. at Berkeley. Steinberg Aud. 935-6200.

Tuesday, Nov. 18

8 a.m. Gastroenterology Grand Rounds Conference. "Zollinger Ellison Syndrome: An Update." John Del Valle, assoc. prof. of medicine, U. of Mich. Medical Center. Room 901 Clinical Sciences Research Bldg. 362-8951.

Noon. Gastroenterology research seminar. "Novel Insights Into Histamine H2 Receptor Signaling." John Del Valle, assoc. prof. of medicine, U. of Mich. Medical Center. Room 901 Clinical Sciences Research Bldg. 362-8951.

Noon. Molecular microbiology/microbial pathogenesis seminar. "Cooperative Interactions Among DNA-bound Transcription Factors: NFAT, Fos and Jun." Stephen C. Harrison, prof., dept. of molecular and cell biology, Howard Hughes Medical Institute, Harvard U. Cori Aud., McDonnell Medical Sciences Bldg. 362-2746.

4 p.m. Mathematics seminar. "Everything You Always Wanted to Know About TeX but Were Afraid to Ask." Steven Krantz, prof. of mathematics. Room 113 Cupples I Hall. 935-6712.

4 p.m. WU Strawberry Workers Campaign lecture. Speaker is Dolores Huerta, co-founder and secretary-treasurer, United Farm Workers. Room 100 Brown Hall. 935-2330.

Wednesday, Nov. 19

6:30 a.m. Anesthesiology Grand Rounds. Speaker is Bruce H. Haughey, assoc. prof. of otolaryngology. Wohl Hospital Bldg. Aud. 362-6978.

8 a.m. Obstetrics and Gynecology Grand Rounds. "The Vaginal Pessary: A Historical Perspective and its Contemporary Use." Bernadette D. Bernardo, chief resident, obstetrics and gynecology. Clopton Aud., 4950 Children's Place. 362-7139.

4 p.m. Biochemistry and molecular biophysics seminar. "Using Optical Tweezers to Study Biological Motors." Steven M. Block, prof., dept. of molecular biology, Princeton U. Cori Aud., 4565 McKinley Ave. 362-0261.

Thursday, Nov. 20

Noon. Molecular biology and pharmacology special seminar. "Gap Junction-Mediated Signaling in Cardiovascular Tissues." Alexander M. Simon, post-doctoral fellow, neurobiology dept., Harvard Medical School. Pharmacology Library: Philip Needleman Library, Room 3907 South Bldg. 362-0269.

4 p.m. Earth and planetary sciences lecture. Tolman Lecture on Precambrian Evolution. "Speculations on Midcontinent Proterozoic Evolution." W. Randall Van Schmus, geology dept., U. of Kansas-Lawrence. Room 361 McDonnell Hall. 935-5610.

4:15 p.m. Philosophy colloquium, lecture and discussion. "Vagueness, Ignorance and Precisification." Jesse Prinz, asst. prof., philosophy/neuroscience/psychology program. Stix International House Living Room. 935-6670.

Friday, Nov. 21

9:15 a.m. Pediatric Grand Rounds. "Tuberculosis Control in Africa: Challenges and Successes in Implementing DOTS." Christy Hanson, technical officer, World Health Organization, National Programme Support, Global Tuberculosis Programme. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Cell biology and physiology seminar. "Mechanisms of DNA Motor Proteins." Timothy M. Lohman, prof. of biochemistry and molecular biophysics. Room 426 McDonnell Medical Sciences Bldg. 362-6950.

4 p.m. Music lecture. "On Musical Dialogue, Analysis and Elliott Carter's String Quartet No. 2." Dora Hanninen, visiting asst. prof. of music. Room 102 Music Classroom Bldg. 935-4841.

7:30 p.m. St. Louis Astronomical Society lecture. "What are We Made of: The Standard Model of Particle Physics." Carl M. Bender, prof. of physics. Room 162 McDonnell Hall. 935-4614.

Saturday, Nov. 22

10 a.m. Photography slide lecture. Stan J. Strembicki, prof. of art and head of the photography program, talks about his narrative photographs. Room 104 Bixby Hall. 935-4643.

Music

Sunday, Nov. 16

2:30 p.m. Washington U. Wind Ensemble performance. "Music of Armenia." Dan Presgrave, director. The Saint Louis Art Museum Aud., 1 Fine Arts Dr. 935-4841.

Thursday, Nov. 20

8:30 p.m. Student recital. Graham Chapel. 935-4841.

Friday, Nov. 21

8:30 p.m. Student recital. Music of Dowland, J.S. Bach, Tárrega and Albéniz. Tom Lattanand, guitar. Graham Chapel. 935-4841.

Performances

Saturday, Nov. 22

7 p.m. Art performance. "Dances of Death (Based on the Woodcuts of Hans Holbein the Younger)." T. David Norton, St. Louis painter and book artist, and Ensemble Archetype perform music, readings, dance and graphic projections. Cost: $5. Bixby Gallery. 935-4643.

Miscellany

Registration open for the AIDS Clinical Trials Unit and MATEC-EM symposium. "NIH Principles and Guidelines for the Use of Antiretroviral Agents in HIV-infected Individuals" (Nov. 21). Eric P. Newman Education Center. For times, costs and to register, call 362-2418.

Registration open for the following Office of Continuing Medical Education seminars. The 23rd annual "Symposium on Obstetrics and Gynecology" (Nov. 13-14) and "Contemporary Evaluation and Management of Valvular Heart Disease" (Dec. 6). Eric P. Newman Education Center. For times, costs and to register, call 362-6891.

Saturday, Nov. 15

9 a.m. Book arts workshop. "Mark on that Book!" Instructor: Bill Harroff. Cost: $35. Room 104 Bixby Hall. To register, call 935-4643.

1 p.m. Book arts workshop. "Make Marbled Paper." Instructor: John Bielik, graphic designer and book artist. Cost: $35, plus $15 supply fee. Room 212 Bixby Hall. To register, call 935-4643.

Wednesday, Nov. 19

7 p.m. Catholic Student Center event. From the Holocaust to Human Rights: A Mini-course on the Work of Elie Wiesel and Noam Chomsky. "A Preferential Option for Unworthy Victims: The Continuing Challenge of Solidarity." Mark Chmiel, adjunct prof. of theology, Saint Louis U. Catholic Student Center, 6352 Forsyth. 725-3358.

Thursday, Nov. 20

8 p.m. Writing Program Reading Series. Ellen Bryant Voigt, award-winning poet, will read from her works. Hurst Lounge, Duncker Hall. 935-7130.

Friday, Nov. 21

5:45 p.m. Hillel Center event. Reform services and dinner. Cost: $8. Pre-paid reservations required by noon Thursday, Nov. 20. Wydown Multipurpose Room. 935-2947 or 935-1933.

6 p.m. Catholic Student Center event. Twilight retreat. "Sexuality, Intimacy and Relationships." Lynn M. Levo. Catholic Student Center, 6352 Forsyth. 725-3358.

Vienna Fest 1997

Friday, Nov. 14

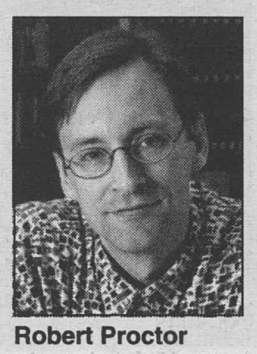
8 p.m. Performing arts dept. performance. "La Ronde," a play by Arthur Schnitzler. Directed by William Whitaker, artist in residence in performing arts. (Also Nov. 15, 21 and 22, same time, and Nov. 16 and 23, 2 p.m.) Roundtable discussion on "La Ronde: A Success With or Without Scandal" follows the Nov. 21 performance. Cost: $10; $7 for senior citizens, faculty, staff and students. Edison Theatre. 935-6543.


JOE ANGELES

Lily Schwarzchild, a Holocaust survivor, displays a piece of fabric bearing the yellow stars all Jews in Hitler's Germany were forced to wear. Schwarzchild attended the Nov. 5 Holocaust Memorial Lecture given by Michael Berenbaum (right), president of Survivors of the Shoah Visual History Foundation.

Robert Proctor, science historian, closes Nazi lecture series Nov. 13

Robert Proctor, an authority on the history of science, will conclude a three-part series of lectures on Nazism at 4 p.m. Thursday, Nov. 13, with the Assembly Series' Thomas Hall Lecture titled "Science and Medicine in the Service of Nazism." Proctor will speak in Room 215 Rebstock Hall.


Robert Proctor

Proctor is a professor of the history of science at Pennsylvania State University, specializing in 20th century science, technology and medicine. He is the author of "Racial Hygiene: Medicine Under the Nazis," a study of biomedical science and science policy under National Socialism; "Value-Free Science? Purity and Power in Modern Knowledge," a study of western ideals of science and science's relationship to politics; and "Cancer Wars: How Politics Shapes What We Know and Don't Know About Cancer," a review of recent theories of the causes of cancer, focusing on the political controversies embedded in different causal theories.

Proctor recently completed "The Nazi War on Cancer," a history of German cancer policy and research in the 1930s and early 1940s.

Before arriving at Penn State, Proctor chaired the Program in Science, Technology and Power at Eugene Lang College at the New School for Social Research in New York from 1986 to 1990. He was visiting lecturer in the history departments of Stanford University (1985) and Virginia Polytechnic Institute (1984); an instructor and teaching fellow in the departments of biology, history of science and Afro-American studies at Harvard University from 1976 to 1984; and scholar-in-residence at the U.S. Holocaust Research Institute at the Holocaust Memorial Museum in Washington D.C. in 1994.

Proctor earned a bachelor's degree in biology from Indiana University in 1976 and a master's degree and doctorate in the history of science from Harvard University in 1977 and 1984, respectively.

Proctor's lecture concludes a series that also featured Michael Berenbaum, president of Survivors of the Shoah Visual History Foundation, and Yaron Svoray, who infiltrated and exposed the neo-Nazi block in Germany.

The lecture is free and open to the public. For information, call 935-5285.

Gallery of Art displays 'Seven Deadly Sins'

"The Seven Deadly Sins," an exhibition of woodcuts by Beat poet and author William S. Burroughs, is on display at the Gallery of Art until Dec. 21.

Along with Allen Ginsberg and Jack Kerouac, Burroughs was one of the founders of the "Beat Generation" of writers and poets. A St. Louis native, Burroughs was the author of such controversial works as "Naked Lunch" and "The Adding Machine," among others. He died earlier this year at his home in Lawrence, Kan.

The portfolio of seven large-scale works is based on a series of woodblocks that the artist shot with a 12-gauge shotgun. Each print represents one of the seven classical sins — sloth, avarice, anger, gluttony, lust, envy and pride — and each is accompanied by a short text about that sin. Both the prints and the texts were composed between February and June 1991.

"The Seven Deadly Sins" opened Nov. 7 in conjunction with another exhibit, "The Dual Muse: The Writer as Artist, The Artist as Writer," which explores the connections between the visual and the literary arts.

Gallery hours are 10 a.m. to 5 p.m. weekdays and 1 to 5 p.m. weekends. For more information, call 935-4523.

Sports

Compiled by Mike Wolf, asst. athletic director for media relations, and Kevin Bergquist, asst. director, sports information. For the most up-to-date news about Washington University's athletics program, access the Bears' Web site at www.sports-u.com.

Bears fall 22-12

Washington University, which dropped its fourth straight road game 22-12 at Central College in Pella, Iowa, seeks its seventh winning season in the last eight years this Saturday at Francis Field.

Current Record: 5-4 (3-1 UAA)

This Week: 1 p.m. Saturday, Nov. 15, vs. Rose-Hulman Institute, Francis Field.

Men's soccer gets bid

After a one-year absence, the men's soccer team earned its seventh NCAA bid in the last eight years after defeating Centre College 4-1 and University of the South 2-0 last week.

Current Record: 13-5 (4-3 UAA)

This Week: Noon Friday, Nov. 14, vs. Trinity University (Texas) at Wheaton College, NCAA Central Regional, Wheaton, Ill.

Women's soccer advances

Playing in its second NCAA tournament in three years, the women's soccer team won the Great Lakes Regional championship last week to advance to the Elite Eight in the tourney's quarterfinal round. Washington U., which has established a school record with 16 victories, is unbeaten in its last 10 games (9-0-1).

Current Record: 16-3-1 (4-2-1 UAA)

This Week: TBA versus Macalester College (Minn.) in NCAA Division III quarterfinals.

Volleyball tourney here

The volleyball team opens defense of its six consecutive national championships Nov. 13-15 in the WU Field House as the Bears host the NCAA Division III Women's Volleyball Championship South Regional competition.

Current record: 32-6 (12-0 UAA)

This Week: 7:30 p.m. Friday, Nov. 14, in NCAA Division III Championship South Regional, Field House; 7:30 p.m. Saturday, Nov. 15, regional championship match, Field House.

Swimmers, divers win

Swimming in only her second collegiate meet, freshman Elisa Annelin broke the school record in the 50 freestyle (25.34 seconds) Saturday as Washington University's swimming and diving teams defeated Illinois Wesleyan University and Vincennes University. Junior Ryan Schuenke won three events Saturday in helping the men's team defeat IWU (76-28) and VU (61-50).

Current Record: Women 3-0; Men 2-2

This Week: 2 p.m. Saturday, Nov. 15, at Millikin University (with the University of Chicago), Decatur, Ill.

Wind Ensemble presents 'Music of Armenia'

The Washington University Wind Ensemble will present a program of the "Music of Armenia" at 2:30 p.m. Sunday, Nov. 16, in The Saint Louis Art Museum Auditorium.

The concert is sponsored by the Department of Music in Arts and Sciences and is free and open to the public.

"By performing these works, I want to expose students — both the members of the wind ensemble and those in the audience — to the exciting repertoire of music based on Armenian folk tunes," said Dan Presgrave, wind ensemble director and lecturer in the music department.

Presgrave added that he hopes the program will appeal to St. Louis' Armenian community.

The program will include Aaram Khachaturian's "Armenian Dances" and "Armenian Folk Songs," as well as works by Loris Chobanian and Alfred Reed, also titled "Armenian Dances." Also on the program are Alan Hovhaness' "Hymn to Yerevan" and music by Mikhail Ippolitov-Ivanov.

For more information, call 935-4841.

Lecture focuses on making 'great streets'

Allan B. Jacobs, a professor in the city and regional planning department at the University of California at Berkeley and a Ruth and Norman Moore Visiting Professor, will discuss "The Making of Great Streets" at 8 p.m. Monday, Nov. 17, in Steinberg Auditorium as part of the School of Architecture's Monday Night Lecture Series. The lecture is free and open to the public.

Jacobs also will meet with members of the University community and St. Louis civic leaders to discuss urban planning issues.

Jacobs is known for his work at the forefront of urban planning and in particular for his research on what creates streets with vitality. His book "Great Streets" discusses the characteristics of 15 streets that he considers the finest in the world. The work analyzes medieval streets in Rome and Copenhagen; streets "in the grand manner" in Barcelona, Paris and Aix-en-Provence; and "once great streets," such as the Avenue des Champs-Elysees in Paris, Via del Corso in Rome and Market Street in San Francisco. Jacobs includes an examination of residential boulevards, street ensembles and tree-lined streets, as well as details about the 15 great streets' dimensions, plans, sections and patterns of use.

Jacobs also has written "Looking at Cities" and "Making City Planning Work," as well as numerous articles.

For more information, call 935-6200.

KEVIN LOWDER

Following the Dual Muse

The International Writers Center symposium on "The Dual Muse: The Writer as Artist, the Artist as Writer" got under way Saturday morning, Nov. 8, with a panel discussion of an essay by Nobel laureate and poet Derek Walcott (left). Panelists included Rochelle Steiner, assistant curator of contemporary art at The Saint Louis Art Museum, and author Breyten Breytenbach. The symposium explored the intersection of the visual and literary arts.

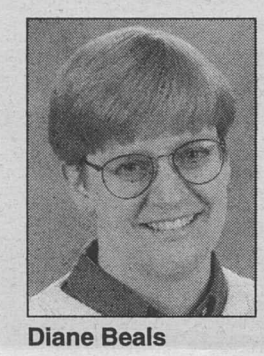
Innovative new classes funded by Kemper grants

— *from page 1*

• Larry M. May, Ph.D., professor of philosophy in Arts and Sciences; and

• Mark Rank, Ph.D., associate professor of social work.

This fall, **Beals** began teaching a two-semester course titled "The Mind-Language Connection in Child Development and Education." In the course description, Beals notes that in the 1990s — "The Decade of the Brain" — immense gains have been made in our knowledge of the development of the human brain: how it shapes and is shaped by thought, speech and behavior.



Diane Beals

This research has sparked a great deal of dialogue on how function of the brain links up with definitions of "mind." Investigating the significance of such discussion of the human mind and its implications for child development and education will bring students in touch with front-line research not only in cognitive and linguistic development, childrearing and education, but also in philosophy, psychology, neuroscience and even literary theory.

Grant, who is on leave this school year, will return in the fall 1998 semester to teach "Understanding World Religions." While the University offers a number of courses in specific religious traditions such as Islam, Buddhism, Christianity, Judaism and Asian religions, there has been no single course for the undergraduate seeking to understand the nature of religion in the larger context of the world's major religious traditions.

The new course addresses this omission by using particular themes shared by all of the major religions as doorways to a greater understanding of these various traditions. By design, the organizing theme will change from year to year, depending on the interest and expertise of the faculty member teaching it. Grant's initial theme represents one of the most visible aspects of all religions: sacred space. This course will explore the different meanings behind seeming similarities in form — such as temples with Hinduism or Buddhism, churches with Christianity, synagogues with Judaism and mosques with Islam — highlighting the very real diversity of the world's religious traditions.

Beata Grant

Head will teach "Court, Cloister and City: Europe in the Middle Ages and Early Renaissance" during the spring 1998 semester. The course will provide an interdisciplinary introduction to the cultural history of Europe from the 12th through the 15th centuries.

The lectures will analyze and compare the distinctive cultures of noble courts, of the Christian church, and of the emerging cities. The texts offered to students will be drawn primarily from descriptions of personal experience, including sources as varied as the personal memoirs of a leading monk (Guibert of Nogent), the letters exchanged between a scholar (Peter Abelard) and his former student and mistress (Heloise), and the incomparable verse pilgrimage of Dante's "Divine Comedy."

A study of the art and architecture of the period, exploring how cultural themes were deployed in material objects as well as in texts, will supplement the source material.

The goal is to provide beginning students with a direct sense of the richness and variety of the cultures which combined to create the western European tradition in its formative period.

May and **Rank** will co-teach "Liberty, Equality and Justice in America" in the spring 1998 semester. The course is designed to explore the civic principles that have shaped America, and to juxtapose those principles with the reality of American life. Specifically, it will examine how the values of "liberty," "equality" and "justice for all" have been understood, to what extent they have been fulfilled in contemporary American society.

Larry M. May

These questions will be pursued from both a philosophical and social science perspective in order to provide students with a broad framework for analyzing what it means to be an American and whether we have created a society that is consistent with these three core American principles.

Mark Rank

Applications for the 1998-99 grants are welcome, with a late January deadline looming on the horizon, said program coordinator Robert H. McDowell, Ph.D., professor of mathematics in Arts and Sciences and co-director of the Teaching Center. Faculty who plan to apply for the grants should call the Teaching Center at 935-5299.

Campus Watch

The following incidents were reported to the University Police Department from Nov. 3–9. Readers with information that could assist the investigation of these incidents are urged to call 935-5555. This release is provided as a public service to promote safety awareness on campus. Campus Watch now is available on the University Police website: http://rescomp.wustl.edu/~wupd

Nov. 3

11:32 p.m. — A student reported that several tubes, vials and syringes were found between Wilson and Rebstock halls. It appeared that the items had fallen from a trash receptacle and were most likely not a bio-hazard.

Nov. 4

10:39 a.m. — A student reported that on Monday, Nov. 3, a laptop computer was stolen from a fifth-floor reading room in Anheuser-Busch Hall. Value: $2,000.

Nov. 5

5:23 p.m. — A student reported that 45 Sony playstation video games and a black carrying case were stolen from a locked suite in Wydown Residence Hall. Value: $2,040.

10:22 p.m. — A student reported that a four-door white vehicle attempted to stop but struck the student in the parking lot east of Crow Hall. The student received bruises; the driver of the car did not stop.

Nov. 6

10:09 a.m. — A staff member reported that two tires were punctured on a trailer used by facilities.

University Police also responded to three additional reports of vandalism; two reports of trespassing; three reports of theft; one report of assault; and one report of a disturbance.

Software Library offers computer users benefits

There's an untraditional library on the Hilltop Campus. Rather than books and bindings, it deals in bits and bytes.

The Software Library (TSL) is a cooperative made up of software users at Washington University. Users join program groups within TSL based on the computer applications and operating systems they use. The idea behind the co-op is that there's power in numbers: By banding together, members receive volume purchase discounts on software.

"We exist primarily to save money for the departments," said Don Blair, associate director of TSL.

In addition to lower prices, TSL provides hardware maintenance, technical support and upgrade protection, which ensures that members receive the latest versions of their programs as well as access to technical support for these programs. TSL also maintains and administers any related contracts.

Currently, TSL has 22 program groups with about 1,300 members from all eight schools as well as administrative offices. Annual membership fees run from $30 to thousands of dollars, depending on the program. Many of the programs cover high-end technical, statistical and graphics software; but TSL also has programs for Macintosh and PC operating systems and anti-virus software.

By working directly with manufacturers to get the lowest software prices, TSL often can save members more than 50 percent of the cost of purchasing single copies of software.

TSL was started in 1985 by a group of faculty members led by Jerome R. Cox Jr., Sc.D., the Harold B. and Adelaide G. Welge Professor of Computer Science. The concept arose as a means of administering a Universitywide project to install a computer network. When software prices began to rise, the idea expanded.

Today, TSL is an independent office with a staff of four. Located on the first floor of Prince Hall, TSL generates its own budget through the money it collects in user fees.

TSL is user-friendly; almost everything can be done without leaving your computer keyboard. Through TSL's Web site, people can join a program, renew existing memberships and order software. Members can request that the disks and documentation be delivered to their office by courier. Some software even is available to be downloaded from the computer network.

It also is flexible. As a cooperative, its members determine its programs. "We're reactive in terms of investigating software pieces," Blair said. "We're grassroots-driven by our members in terms of what our products are."

Therefore, Blair said, getting the word out on this high-tech library is important.

"The more people that know about us and the more people that use the service, the more economical we can be," Blair said, "so it's a win-win situation."

For more information about TSL, call 935-7388 or visit TSL's Web site at tsl.wustl.edu. —*Martha Everett*

Edible plant vaccine patents granted

— *from page 1*

gens. Mucosal immunity with secretory antibodies in saliva is very important in preventing the bacteria that cause tooth decay from sticking to teeth.

Patent applications on this work were filed in the United States and other countries in 1988 and 1989. More recently, Curtiss and his Washington University colleagues have generated genetically modified alfalfa expressing *E. coli* antigens to control diarrheal diseases. Other researchers in the United States and abroad have been using the technology to develop plant vaccines in alfalfa, tomatoes, bananas and potatoes to prevent both bacterial and viral infectious diseases.

"I am excited that these ideas and discoveries that Guy and I had in the mid-1980s are likely to generate some vaccines, at very reasonable costs, to lessen the likelihood of infectious diseases in both animals and humans," Curtiss said. "This will be particularly important in the developing world. It is also possible that these plant vaccines can be used to alleviate allergies or to correct autoimmune diseases. If so, we will have additional reasons to be thankful for plants in improving the environment in which we live, our nourishment and our health."

Curtiss was formerly chair of the Department of Biology in Arts and Sciences and director of the Center for Plant Science and Biotechnology. He was named Missouri Inventor of the Year in early 1997.

— *Tony Fitzpatrick*

Introducing new faculty members

The following are among the new faculty members on the Medical Campus. Others will be introduced periodically in this space.

Richard D. Brasington, M.D., associate professor of medicine, had been an associate professor at the University of Wisconsin, Madison, before joining the Division of Rheumatology in 1996. He received a bachelor's degree from Harvard University in 1974 and a medical degree from Duke University in 1980. Brasington completed a six-year internal medicine residency and rheumatology fellowship at the University of Iowa in 1986. He spent the next decade on the faculty of the University of Wisconsin, Madison, and as a physician at the Marshfield Clinic. A physician at Barnes-Jewish Hospital, Brasington currently is director of clinical rheumatology and of the Regional Arthritis Center at the School of Medicine. He treats patients with rheumatological diseases and investigates new arthritis drugs.

Mark A. Mintun, M.D., associate professor of radiology, comes from the University of Pittsburgh, where he served as medical director of an imaging facility. He earned a bachelor's degree from Massachusetts Institute of Technology in 1977 and a medical degree from Washington University in 1981. That year, Mintun received the Hugh M. Wilson Award for Research in Radiology. He took a one-year internship at Jewish Hospital, followed by a research neurology fellowship and a nuclear medicine residency at the School of Medicine. Mintun was an assistant professor here from 1985 to 1989 before holding associate professor positions at the University of Michigan and the University of Pittsburgh. He currently studies energy needs of neurons in the visual cortex with positron emission tomography. He also uses this imaging technique to analyze the effects of anti-depressants on brain chemistry and function.

James B. Skeath, Ph.D., assistant professor of genetics, arrives from the University of Illinois, Urbana-Champaign, where he was a postdoctoral fellow. He obtained a bachelor's degree in 1988 from Haverford (Pa.) College and a doctorate in 1993 from the University of Wisconsin, Madison. He was awarded a Clementine-Cope Fellowship for Graduate Research from Haverford College and was a finalist for the 1994 Larry Sandler Memorial Lecture. Skeath studies the molecular mechanisms of nervous system development. He is using genetic and other techniques to identify the signals that turn embryonic cells of fruit flies into correctly positioned nervous system precursors. His four-year $823,814 grant from the National Institute of Neurological Disorders and Stroke began in July and his Damon Runyon Scholar Award starts next January.

Barbara B. Sterkel, M.D., assistant professor of medicine, is the clinical director of the Bone Health Program. She joined the School of Medicine in 1996 after serving as an assistant clinical professor of medicine at Saint Louis University. She received a bachelor's degree from Emory University in Atlanta in 1971 and a medical degree from Saint Louis University in 1975. She is board certified in both internal medicine and nuclear medicine and has long been interested in osteoporosis. Her work in osteoporosis includes physician education, public awareness and research. She is the founder and current president of the Missouri Osteoporosis Foundation.

For The Record

For The Record contains news about a wide variety of faculty, staff and student scholarly and professional activities.

Of note

Anandarup Gupta, Ph.D., research instructor of medicine in the renal division, has received a five-year $490,000 grant from the Arthritis and Musculoskeletal Disease Institute of the National Institutes of Health. Gupta will study the influence of phosphate transport on the ability of osteoclast bone cells to degrade bone. …

Scott D. Minor, Ph.D., assistant professor of physical therapy, received the Lucy Blair Service Award from the American Physical Therapy Association last summer. The award honors members who have made exceptional contributions to the association through district, state or national activities. Among other accomplishments, Minor was recognized for his outstanding work with the Section on Research as chair of the Combined Sections Meeting Program. …

T.J. Tarn, D.Sc., professor of systems science and mathematics, was honored with the Nakamura Prize by the Intelligent Robots and Systems (IROS) organization in September in Grenoble, France. Tarn was recognized for his decade-long contribution to the technological advancement of intelligent robots and systems. Tarn is the first recipient of the award, which was presented at a conference marking the 10th anniversary of IROS. It was sponsored by two major societies: the Institute of Electrical and Electronics Engineers and RSJ Robotics Society of Japan.

On assignment

Anne H. Cross, M.D., assistant professor of neurology, has been named to the editorial board of Neurology, one of the major clinical neurology journals and the official journal of the American Academy of Neurology. Two other Washington University faculty members — **Michael J. Noetzel,** M.D., associate professor of neurology and of pediatrics, and **William J. Powers,** M.D., associate professor of neurology and of radiology — also serve on the editorial board of Neurology.

Speaking of

John C. Morris, M.D., professor of neurology and assistant professor of pathology, was a plenary speaker at the "Cognitive Decline and Dementia" session of the XVI World Congress of Neurology, held in September in Buenos Aires, Argentina. Morris presented "Cognitive Decline in the Elderly" at the congress, which included more than 4,000 neurologists from around the world. He also presented "Metrifonate: Potential Therapy for Alzheimer's Disease" at the "Neuropharmacology" session.

Hilltop faculty members receive promotions, tenure

The following Hilltop Campus faculty received promotions on record as of July 31, 1997. Those with asterisks were promoted with tenure.

Nancy E. Berg* to associate professor of modern Hebrew languages and literatures in Arts and Sciences (Also interim chair of Jewish and Near Eastern studies and assistant professor of comparative literature, both in Arts and Sciences)

Thomas J. Bernatowicz to research professor of physics in Arts and Sciences (also research professor of earth and planetary sciences in Arts and Sciences)

William P. Bottom* to professor of organizational behavior

Robert J. Charity to research associate professor of chemistry in Arts and Sciences

Elyane Dezon-Jones to professor of French in Arts and Sciences

Willem H. Dickhoff to professor of physics in Arts and Sciences

Douglas B. Dowd* to associate professor of art

Francis B. Drake* to associate professor of social work

Renato Feres* to associate professor of mathematics in Arts and Sciences

Iain A. Fraser to professor of architecture

Richard A. Gardner to professor of mechanical engineering (also assistant chair of the Department of Mechanical Engineering)

Scott R. Gilbertson* to associate professor of chemistry in Arts and Sciences

Maarten F.L. Golterman* to associate professor of physics in Arts and Sciences

Thomas F. Head* to associate professor of history in Arts and Sciences

Peter Heath to professor of Arabic languages and literatures in Arts and Sciences (also chair of Asian and Near Eastern languages and literatures and professor of comparative literature, both in Arts and Sciences)

Fatemeh Keshavaraz-Karamustafa* to associate professor of Persian languages and literatures in Arts and Sciences (also director of the Center for the Study of Islamic Societies)

Bamin Khomami to professor of chemical engineering

Allan Larson to professor of biology in Arts and Sciences

Timothy J. Lensmire* to associate professor of education in Arts and Sciences

Jonathan B. Losos* to associate professor of biology in Arts and Sciences

Ronald J. Mann* to professor of law

William B. McKinnon to professor of earth and planetary sciences in Arts and Sciences

Michael C. Ogilvie to professor of physics in Arts and Sciences

Himadri B. Pakrasi to professor of biology in Arts and Sciences

Shanta Pandey* to associate professor of social work

Gurudatta M. Parulkar to professor of computer science (also director of the Applied Research Laboratory)

Carl B. Safe to professor of architecture

Elzbieta Sklodowska to professor of Spanish in Arts and Sciences

Lee G. Sobotka to professor of chemistry in Arts and Sciences (also professor of physics in Arts and Sciences)

Arlene R. Stiffman to professor of social work

John-Stephen A. Taylor to professor of chemistry in Arts and Sciences

Robert L. Thorp to professor of art history and archaeology in Arts and Sciences

Robert K. Weninger to professor of Germanic languages and literatures in Arts and Sciences (also chair of the Department of Germanic Languages and Literatures and professor of comparative literature, both in Arts and Sciences)

Michael E. Wysession* to associate professor of earth and planetary sciences in Arts and Sciences

Correction

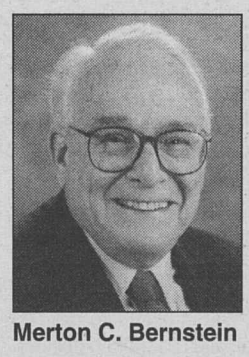
Arthur Monsey's obituary in the Nov. 6 issue of the Record had an incomplete list of survivors. The list should have read: Among the survivors are his wife of 47 years, Janet Monsey; two daughters, Lynda Monsey of Boulder, Colo., and Barbara Monsey of Minneapolis; three sons, John Monsey and Michael Monsey, both of St. Louis, and Steven Monsey of Seattle; a brother, Earl Monsey of Las Vegas; and five grandchildren.

News Analysis

News Analysis contains excerpts from the For Expert Comment service. The service, which provides timely faculty comments to media across the country, is distributed by the Office of University Communications.

Recent stock market plunge highlights reason not to privatize Social Security

Merton C. Bernstein, LL.B., the Walter D. Coles Professor of Law Emeritus, is a widely consulted expert on Social Security, who does not subscribe to the doomsday scenario for Social Security. Bernstein served as the principal consultant to the National Commission on Social Security Reform; as a delegate to the White House Conference on Aging; and as a consultant to NBC for its Peabody Award-winning program "Private Pensions: The Broken Promise."



Merton C. Bernstein

The recent stock market plunge of more than 550 points underlines the risks to individuals of proposals to privatize Social Security, Bernstein said, noting that Social Security can ride out such market fluctuations while individual investors can be stuck.

"Diverting Social Security payroll taxes into private accounts exposes individual employees to loss of a substantial portion of their retirement income by fraud, unwise investments or bad luck," he noted. "(The Oct. 27) market turmoil only underlines the risk in market privatization.

"A better way to tap into the earning power of private investment is for Social Security to invest part of its substantial reserves — now $600 billion, and $1.2 trillion by 2012 — in the stock market. There the gains would outweigh losses, but no individual runs the risk of loss for any particular investment."

Bernstein said privatization also would require added costs of launching and funding the new system, while continuing Social Security for many decades. "Simultaneously funding both systems would necessitate higher payroll taxes than employees now pay," he said.

"Indeed, one major proposal to switch a large amount of the employee FICA tax from Social Security to 'private savings accounts' boosts the FICA rate by 1.52 percentage points. Even though the proposal cuts Social Security benefits substantially, the Treasury must borrow $1.9 trillion to pay those lesser benefits," he warned. "Of course, such mammoth borrowing undercuts the proclaimed privatization goal to increase savings."

Bernstein also stressed that privatization is unnecessary since modest measures can easily assure Social Security's solvency.

"Social Security is in much better financial shape than most people realize," Bernstein said. "The 1997 Social Security Advisory Council adopted the Social Security trustees' projection that improved program income of 2.17 percent would assure benefits for the long haul. That additional income could come from investing in the market, extending Social Security coverage to the state and local government employees not yet in the system (most are) and taxing benefits as private pensions are."

Opportunities & personnel news

Hilltop Campus

Information regarding these and other positions may be obtained in the Office of Human Resources, Room 130, at West Campus. Job openings may be accessed via the World Wide Web at cf6000.wustl.edu/hr/home. If you are seeking employment opportunities and are not currently *a member of the Washington University staff, you may call our information hotline at 935-9836. Staff members may call 935-5906.*

Associate Director Graduate Business Financial Aid 980090. *Business.* Requirements: bachelor's degree, MBA or similar analytical preparation preferred; three or more years financial, admissions or administrative experience in a university setting; ability to perform work with high degree of accuracy; ability to establish and maintain positive and cooperative working relationships; strong interpersonal and communication skills; good judgment; ability to maintain the security of confidential information; electronic loan application system or computer systems experience preferred. Position involves some travel to recruit MBA candidates.

LAN Engineer 980091. *Computing and Communications.* Requirements: bachelor's degree in computer science, electrical engineering or related field, or equivalent experience; two years experience working on Macintosh equipment; experience in networking (Appleshare, Appletalk, Ethernet, TCP/IP); experience as system administrator; experience with Apple operating system software, MS-DOS and Microsoft Windows; people skills for training and systems analysis.

Audio Visual Coordinator/Event Support (part time) 980093. *School of Law.* Requirements: high school diploma, some college preferred; willingness to learn operation of audio-visual presentation control systems including Crestron Touch Panel control systems, Barco LCD & CRT data/video projectors; computer imaging presentation components, including Extron Emotia Downscan converters and Extron RGB interfaces; experience in the operation of audio recording and public address technologies, including wireless microphones; demonstrated ability using computer/multimedia processes, computer (laptap) projection interfacing, software navigation and familiarity with the Internet; demonstrated ability with video cameras.

Senior Unix Systems Manager 980094. *CEC.* Requirements: bachelor's degree; at least four years experience managing Unix systems; willingness to develop NT skills; experience with NT and Ethernet switches a plus; good interpersonal skills. Responsibilities include supporting Universitywide educational and administrative services, including PCS and Unix workstations running Sun Solris SGI Trix, Windows NT, Windows95 and Mac operating systems. Salary commensurate with qualifications.

Senior Project Leader 980096. *Computing and Communications.* Requirements: college degree preferred; five years experience in business system analysis, design and implementation of human resource or financial applications; good verbal and written communication skills to lead both technical and non-technical team members in developing and implementing efficient and effective business processes; IBM mainframe background using Mantis, Cobol, Total and OS JCL for online and batch processing; PC training and experience preferred using newer technology tools, such as MS SQL server and Powerbuilder.

Program Coordinator 980098. *International Writers Center.* Requirements: bachelor's degree; familiarity with Microsoft Word, PageMaker, Filemaker Pro and Excel for Macintosh. Responsibilities include coordinating all programs and services of the International Writers Center with members of the campus and the St. Louis community.

Assistant Communications Editor 980099. *Undergraduate Admissions.* Requirements: some college; experience in writing, editing, design and layout; proofreading skills; ability to manage multiple tasks; attention to detail. Responsibilities include assisting the manager of Admissions Communications Programs and the Executive Director of Publications with creating selected undergraduate recruitment communications; soliciting, assembling and proofreading copy from the admissions office and other University academic and administrative units.

Director of Computing Technology and Services 980100. *Computer Science.* Requirements: bachelor's degree in computer science; five years experience managing computer systems and networks; programming experience in C and/or C++; experience managing system administration personnel or strong evidence of management potential; thorough knowledge of Unix and NT operating systems and networks, including TCP/IP, Cisco routers and Ethernet switches; familiarity with network management; knowledge of Net-BSD and Linux operating systems helpful; ability to identify needs for new software tools and acquire or manage development of custom tools, as appropriate; ability to interact effectively with wide range of faculty, staff and students.

Member of Technical Staff, CTS 980103. *Computer Science.* Requirements: bachelor's degree in computer science, master's preferred; at least two years experience managing computer systems and networks; familiarity with network management, including configuration management and basic troubleshooting; knowledge of ATM networks helpful; programming experience in C and C++; ability to maintain software systems in C and C++; thorough knowledge of Unix and NT operating systems and networks, including TCP/IP, Cisco routers and Ethernet switches; knowledge of Net-BSD and Linux operating systems helpful; knowledge of the WWW, HTML, use of CGI and Java for internet application development.

Member of Technical Staff, CTS 980104. *Computer Science.* Requirements: bachelor's degree in computer science, master's preferred; two years experience managing computer systems and networks, including configuration management and basic troubleshooting; programming experience in C and C++; ability to maintain substantial software systems in C and C++; thorough knowledge of Unix and NT operating systems and networks, including TCP/IP, Cisco routers and Ethernet switches; knowledge of Net-BSD and Linux operating systems helpful; knowledge of the WWW, HTML, use of CGI and Java for internet application development.

Receptionist 980107. *Undergraduate Admissions.* Requirements: high school diploma, some college preferred; receptionist skills, secretarial skills preferred; university experience preferred; ability to greet and direct hundreds of visitors to campus; flexibility, initiative and a sense of humor.

Office Assistant 980110. *Social Work.* Requirements: secretarial school or two years college; two years office experience; strong computer background, including data entry skills, Microsoft Office and database experience; strong interpersonal and telephone communication skills; flexibility; organizational skills and the ability to accomplish multiple tasks concurrently. Responsibilities include assisting the Coordinator for Field Education in the GWB School of Social Work and providing support for students, field instructors and Office of Field Education staff in practicum activities.

Assistant Manager of Personal Computing Support 980113. *Business.* Requirements: degree in engineering or applied science, technical training or equivalent experience; one to two years experience installing and maintaining Windows NT (server and workstation) and exchange server; experience with SMS server and SQL server a plus; thorough understanding of network infrastructure, hardware and software; superior technical judgment; organizational and follow-up skills; exceptional customer service.

Communications Coordinator 980114. *Public Affairs.* Requirements: associate's degree or equivalent experience; one to two years secretarial and business experience; specialized computer skills, including word processing (Mac), fax modem transmission and database management; general knowledge of desktop publishing; ability to learn new applications; willingness to assume responsibility and to carry out duties; solid understanding of and commitment to highest professional public relations standards.

University Communications Secretary 980115. *Public Affairs.* Requirements: high school diploma, some college preferred. One to two years secretarial/receptionist experience or training; accurate typing at least 60 wpm; general knowledge of executive office procedures; excellent telephone skills; willingness to assume responsibility and carry out duties with a minimum of supervision; ability to work well with others and deal effectively with the public; computer skills; solid understanding of and commitment to highest professional public relations standards.

Accounting Manager 980116. *Biology.* Requirements: bachelor's degree; extensive working knowledge of payroll, FIS, WU and grant agency regulation and accounting policies and guidelines; demonstrated strong interpersonal skills; ability to interact in a professional manner; excellent written and oral communications; ability to excel in a multi-task, heavy workload environment. Responsibilities include supervising the ongoing activities of the accounting, grant processing, purchasing and payroll functions of the biology department; monitoring departmental and grant expenditures against budget; ensuring compliance with all regulatory and WU accounting practices and policies.

Administrative/Library Assistant (part time) 980123. *Business School.* Requirements: high school diploma; minimum three years secretarial experience; ability to deal with diverse populations; self-motivated; energetic and enthusiastic individual willing to work as part of a team; flexibility; excellent customer service skills. This is a seven-month part-time position.

Acquisitions Assistant 980124. *School of Law.* Requirements: high school diploma, some college preferred; data entry, statistical reporting, library technical services, supervisory experience; experience with computers, Internet resources and research tools and library automation system, preferably Innopac; proven ability to communicate with a variety of staff and users; ability to express ideas, policies and plans effectively, verbally and in writing; detail oriented.

Customer Service Representative 980125. *Telephone Services.* Requirements: high school diploma, some college preferred; strong organizational and interpersonal skills; excellent verbal and written skills; attention to detail; strong follow-up; ability to work with minimum supervision on numerous tasks; excellent computer skills, including Windows applications, WordPerfect or similar word processing software; proficient with telephone and voice mail systems; willingness to work overtime occasionally.

Executive Secretary 980126. *Comparative Literature.* Requirements: high school diploma, college preferred; previous university experience; excellent computer skills and experience with Windows 95, FIS, SIS, E-mail; experience with Microsoft Word preferred; office management skills; ability to handle multiple and diverse tasks in an organized, accurate and timely manner; excellent communication skills, verbal and written; attention to detail; proactive, anticipate problems and seek solutions; ability to work effectively with administrators, faculty, staff members, students and campus visitors; sensitivity in handling confidential information. This is a 10-month appointment.

Awards Processor 980127. *Student Financial Services.* Requirements: high school diploma, some college preferred; planning and organizing skills; ability to make timely and sound decisions; well-developed service orientation; team-building skills; initiative; effective oral communication skills; excellent written communication skills and ability to tailor writing styles according to varying forms of communication; analytical ability; creative thinking; ability to work under pressure; adaptability; flexibility; resourcefulness; tenacity; professionalism; must possess and appreciate university and department vision; ability to create and nurture relationships.

Treasury Analyst 980128. *Treasury Services.* Requirements: bachelor's degree; five years related experience; excellent quantitative aptitude; excellent written and verbal communication skills; understanding of financial and accounting concepts and practices; excellent spreadsheet and computer skills including Word or WordPerfect, Powerpoint and Database software; ability to work successfully on complex projects with a high degree of independence; ability to work successfully on teams; reliability; initiative; focus on continuous process improvement and first time quality techniques.

Library Assistant (part time) 980129. *Business.* Requirements: some college, bachelor's degree preferred; good communication skills; strong service orientation; ability to understand, interpret and implement a wide variety of policies and procedures; Internet experience preferred. Summer work schedule will differ depending upon person's availability and library needs but will be at least 20 hours per week. Normal hours are Monday (noon-3 p.m.), Friday (4 -7 p.m.), Saturday (10 a.m.-6 p.m.) and Sunday (noon-6 p.m.).

Mechanic (Bargaining Unit Employee) 980133. *Facilities Planning and Management.* Requirements: high school diploma, technical school training in maintenance-related courses preferred; craft and/or multi-craft expertise; 24-hour availability for emergencies; willingness to work in a multi-craft customer-oriented environment with the ability to communicate and work effectively with members of the campus community; ability to read and understand blueprints; must be willing to provide one's own hand tools.

Administrative Secretary 980134. *Medical Alumni and Development.* Requirements: high school diploma, college degree preferred; minimum five years secretarial experience; high accuracy; strong verbal, written and organizational skills; thorough knowledge of computers; general knowledge of filing and office procedures; willingness to assume responsibility and carry out duties with a minimum of supervision and to work overtime occasionally; ability to work well with others and communicate with the public in a professional manner.

Mechanic (Bargaining Unit Employee) 980136. *Facilities Planning and Management.* Requirements: high school diploma, technical school training in maintenance related courses preferred; craft and/or multi-craft expertise; 24-hour availability for emergencies; willingness to work in a multi-craft customer-oriented environment with ability to communicate and work effectively with members of the campus community; ability to read and understand blueprints; must be willing to provide one's own hand tools.

Secretary/Receptionist (part time) 980137. *Gallery of Art.* Requirements: high school degree or equivalent; one to two years of college preferred; independent individual interested in working in a cultural institution and capable of participating in a group to manage the Gallery of Art's affairs; ability to be the voice of the gallery; superior telephone etiquette; strong verbal and written communication skills; flexibility to work with diverse constituencies; working knowledge of University procedure; general office experience.

Curator 980139. *Gallery of Art.* Requirements: Ph.D. in art history; expertise in modern art; some background in contemporary art and/or the history of photography preferred; museum or gallery experience preferred. The curator reports to the Gallery Director and will hold an adjunct faculty position with the Department of Art History and Archaeology. Application deadline 12/15/97.

Administration Computer End User Support. *CEC.* Requirements: some college; thorough knowledge of Windows NT and Windows 95-based office systems including system configuration, networking and applications such as Microsoft Office and PageMaker. Responsibilities include handling computer systems end-user support for School of Engineering staff; providing triage to determine nature and source of problems; assessing user requirements and aiding in developing system configuration; providing both technical and design support for Web pages.

Medical Campus

The following is a partial list of positions available at the School of Medicine. Employees interested should contact the medical school's Department of Human Resources at 362-7196 to request applications. External candidates may call 362-7195 for information regarding applicant procedures or may submit resumes to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110. Job openings also may be accessed via the World Wide Web at http://medicine.wustl.edu/wumshr.

Network Technician. Requirements: working knowledge of computer and network technology; experience pulling network cable and troubleshooting networks; manual dexterity; extensive walking. Responsibilities include installation of CAT-5 network cabling, fiber optic cable and other structured wiring products; troubleshooting local- and wide-area networks, including Ethernet, FDDI, and serial lines; setup and installation of network devices, such as repeaters, hubs, terminal servers and bridges.

Nurse (part time). Requirements: RN or LPN; skilled with IVs; detail oriented; strong interpersonal skills. Responsibilities include assistance with ongoing clinical research study on diabetes prevention and weight loss; calling potential subjects, completing phone questionnaire and explaining study; performing oral glucose tolerance tests; keeping in contact with subjects and reinforcing diet and exercise changes. Position is approximately eight hours per week.

Professional Rater 980074. Requirements: bachelor's degree in psychology, sociology or related discipline; interviewing experience preferred; excellent communication skills, organization skills and attention to detail; accurate record keeping ability; independent judgment and discretion in handling confidential information; schedule flexibility for accommodating interview subjects. Responsibilities include locating subjects in a cancer research project and/or medical records by means of tracking system; compiling and entering data and maintaining database; interviewing subjects in person and by phone; providing necessary documentation; requesting samples of tissue and lympsite on targeted subjects. Position may require conducting interviews in the homes of research participants.

Medical Research Technician 980523. Requirements: bachelor's degree in chemistry or biology, or three years experience in biology research lab or related field; experience in molecular biology and/or immunohistochemistry; ability to work from written protocols and follow instructions; manual dexterity; ability to work with other laboratory staff, unit staff and PIs. Responsibilities include conducting experiments using fluorescence microscopy to examine cells and tissues; performing minor surgery on small rodents; preparing solutions and ordering supplies. Position offers flexible hours and option of part-time work depending on needs of the right candidate.

Research Patient Assistant 980535. Requirements: bachelor's degree, one year experience interviewing and tracking research subjects; strong organizational and interviewing skills. Responsibilities include assisting with large research project — data entry, phone interviews, obtaining medical release for patient follow-up information, tracking individuals who do not respond to questionnaires and scheduling follow-up tests.